“DESIGNING JUMBO BAG USING QFD & TRIZ TO INCREASE PRODUCTIVITY
(Case Study: Fertilizer’s Loading Unloading in PT. Petrokimia Gresik)”

Name: Anindya Lakshitta
NRP: 2507100072
Department: Teknik Industri FTI-ITS
Supervisor: Ir. Sritomo Wignjoesoebroto, MSc.

Abstract

PT. Petrokimia Gresik is one of the big fertilizer company in East Java. In fertilizer distribution process, material handling becomes a dominant activity. This matter become company’s main concern, because loading and unloading is considered as non productive activity. This non productive activity occurs from loading and unloading process using manual labor. The fertilizer were arranged one by one after moved from the truck to the ship hull using pallet. In addition, the use of pallet has a negative impact to the fertilizer, such as fall, tear up caused by sling and humidity. Therefore, to improve material handling process, a new alternative for material handling equipment is needed. Based on given explanation, this research aim to design equipment that can increase loading and unloading time productivity. This equipment called jumbo bag, which can be mounted with 30 fertilizer bag at once. This jumbo bag acts as a material handling safety and helper equipment. Using this jumbo bag, fertilizer doesn’t need to be arranged one by one by manual labor. The development of this product uses Quality Function Deployment methods and Theoriya Resheniya Izobretatelskikh Zadatch (TRIZ). QFD was used to identify consumer’s needs and wants on jumbo bag design characteristic. From consumer’s need identification, contradiction which occurs were solved by TRIZ methods. From both methods, designed jumbo bag could increase loading and unloading standard output up to 250% and reduce shipment cost by Rp. 333.117.368.86 annually.

Key words: Product Design, Quality Function Deployment, Theoriya Resheniya Izobretatelskikh Zadatch, Jumbo Bag.